

Los Angeles Community College District
Proposition A Bond Program

Sustainable Building - Principles, Standards and Processes

Planning and Accreditation Committee Recommendations

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Table of Contents

	Page #
I. Sustainability – Background	
A. Definitions	4 - 5
B. Sustainable Building Measurement Criteria	6
C. LEED™ Categories of Sustainable Building	7-13
II. Sustainable Principles	14-15
III. Sustainable Standards – New Construction	
A. Definitions	16
B. Standards	17
C. Process / Procedures	18-19
IV. Sustainable Standards – Major Renovations	
A. Definitions	20
B. Standards	21-22
C. Process / Procedures	23-24

A. Definitions

Sustainable Development

“The term ‘sustainable development’ would be doomed to the scrap heap of short-lived and overused buzzwords were it not rooted in a traditional value, stewardship – the careful, economical, long-term management of land, community, and resources. It’s a value that some towns have recently let fall by the wayside. But it’s alive and well in many others, even if they don’t notice it. People who deeply care about their community and who think conscientiously about the long-term implications of their actions are working for sustainability and stewardship, whether or not they use these words.”

The Economic Renewal Guide: A Collaborative Process
of Sustainable Development

- Amory Lovins,

Rocky Mountain Institute, 2001

A. Definitions (continued)

"Sustainability meets the needs of the present without compromising the ability of future generations to meet their own needs."

-United Nations World Commission on Environment and Development.

"Then I say the earth belongs to each . . . generation during its course, fully and in its own right, no generation can contract debts greater than may be paid during the course of its own existence."

-Thomas Jefferson, September 6, 1789.

"Sustainability refers to the ability of a society, ecosystem, or any such ongoing system to continue functioning into the indefinite future without being forced into decline through exhaustion . . . of key resources."

-Robert Gilman, President of Context Institute.

"The word sustainable has roots in the Latin *subtenir*, meaning 'to hold up' or 'to support from below.' A community must be supported from below - by its inhabitants, present and future. Certain places, through the peculiar combination of physical, cultural, and, perhaps, spiritual characteristics, inspire people to care for their community. These are the places where sustainability has the best chance of taking hold."

-Muscoe Martin, "A Sustainable Community Profile,"
from *Places*, Winter 1995.

B. Sustainable Building Measurement Criteria

U.S. Green Building Council - LEED™ Rating System**

- In 1993 the U.S.Green Building Council (USGBC) was formed to provide leadership, integration and education related to environmental issues facing the building industry
- In 1994 the USGBC formed the LEED™ Rating System after reviewing the European system, BREEAM (Building Research Establishment Environmental Assessment Method)
- LEED™ Rating System evaluates building performance from a whole building perspective over a building's life cycle
- By March 2000, there were 12 projects completed using the LEED™ application process in the United States

*** The U. S. Green Building Council is a non-profit organization formed for the specific purpose of carrying out a mission to promote buildings that are environmentally responsible and healthy. The Council has formed effective relationships with key federal agencies, including the Department of Energy, and the Environmental Protection Agency.*

C. LEED™ Categories of Sustainable Building

1. Sustainable Sites
2. Water Efficiency
3. Energy and Atmosphere Design
4. Materials and Resources
5. Indoor Environmental Quality
6. Innovation and Design Process

1. Sustainable Sites*

- Optimize building orientation
- Design site to retain and make use of stormwater runoff
- Minimize site erosion
- Shade parking lots and walkways
- Include preferred parking for carpools and van pools
- Create a secure campus environment
- Install bike racks
- Design with and preserve natural site features

* Selected examples

2. **Water Efficiency***

- Landscape with native and drought-tolerant plants
- Use water-efficient landscaping
- Use high-efficiency irrigation systems
- Use low flow fixtures
- Exceed building code in water reduction

* Selected examples

3. Energy and Atmosphere Design*

- Exceed ASHRAE 1999 (American Society of Heating, Refrigerating and Air-conditioning Engineers) energy performance requirements by 15% for new construction and 10% for major renovation projects
- Eliminate CFCs and HCFCs (hydrochlorofluorocarbons)
- Optimize building's energy performance
- Utilize renewable energy sources

* Selected examples

4. **Materials and Resources***

- Utilize local / regional expertise, labor & materials
- Specify materials with no or low VOC content, low toxicity and recycled content
- Consider products made from renewable resources
- Require contractor to utilize a construction waste recycling plan
- Use prefab systems to reduce on-campus waste
- Set up campus-wide dual bin system for recyclables and trash

* Selected examples

5. Indoor Environmental Quality*

- Minimize indoor air pollution
- Require non-toxic paint
- Require non-toxic adhesives & sealants
- Prohibit casework with formaldehyde
- Maximize natural daylighting
- Provide operable windows
- Bring cool nighttime air into buildings
- Provide better classroom acoustics

* Selected examples

6. Innovation & Design Process*

- LEED™ Accredited Professionals on design team
- Educational component
- Organizational, agency, and governmental involvement
- Technical innovation

* Selected examples

Sustainable Principles - Approved by Accreditation and Planning Committee

1. Minimize the negative long-term effect on the environment

Conserve natural resources

- Water
- Fossil fuels
- Forests
- Use recyclable / recycled materials

2. Maximize use of renewable resources **

- Solar energy
- Geothermal energy
- Certified wood

3. Maximize energy efficiency and utilization

4. Provide for aggressive and thorough pursuit of rebates

****Energy Policy:** *The District will develop a separate energy policy addressing renewable energy resources and the various applications of alternatives following a quantitative analysis for each campus.*

Sustainable Principles (continued)

- 5. Select architects, engineers and other professionals who are LEED™ accredited, as deemed appropriate**

- 6. Provide for environmental quality**
 - Improve interior air quality and lighting
 - Mitigate noise factors
 - Reduce negative influence of waste products

- 7. Facilitate use of alternate forms of transportation**
 - Public transportation
 - Bicycles
 - Carpooling
 - Non-fossil vehicular fuels

A. Definition – New Construction

Definition of those projects to receive a structured application of the District's sustainable building standards

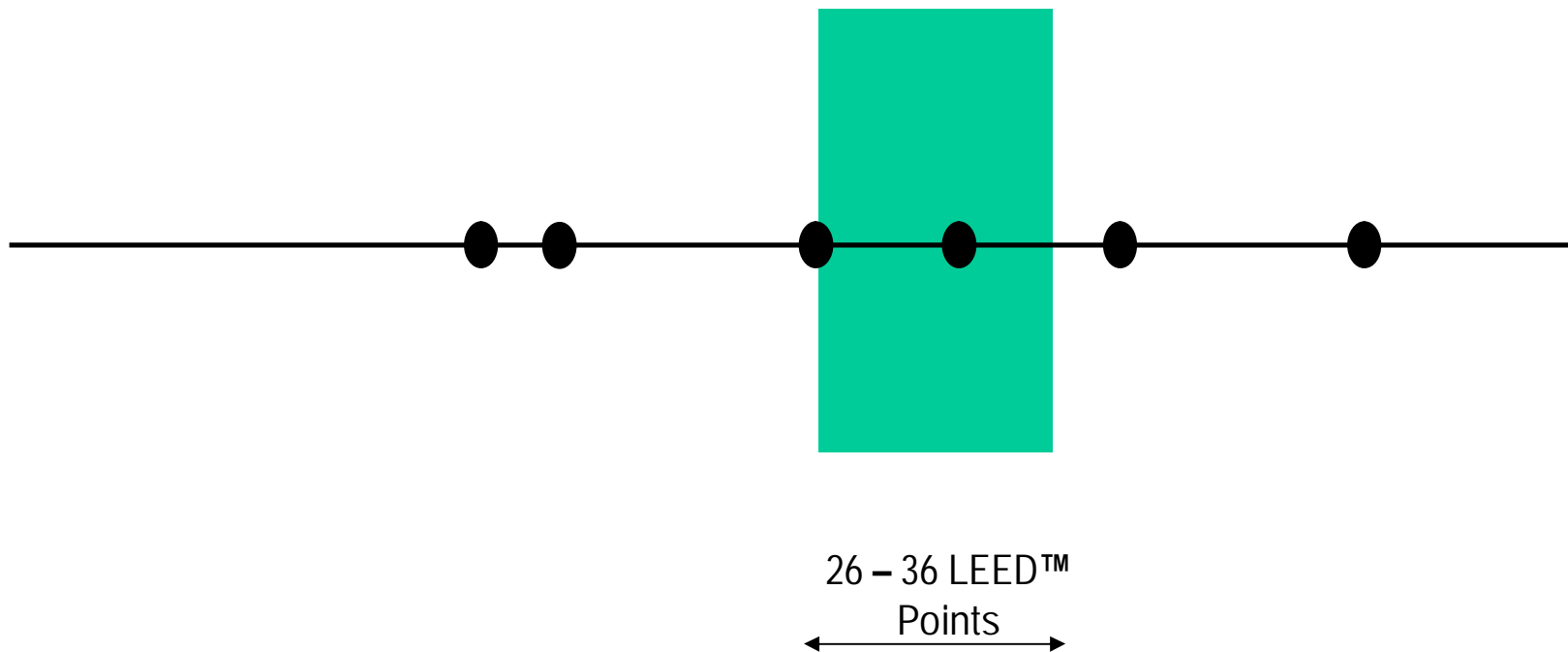
Must meet all of the following criteria:

- Over 50% funding from Proposition A
- Building footprint over 7,500 square feet
- Constructed project is an occupied structure
- Additionally, renovation projects when code upgrades are triggered throughout the structure

B. Standards

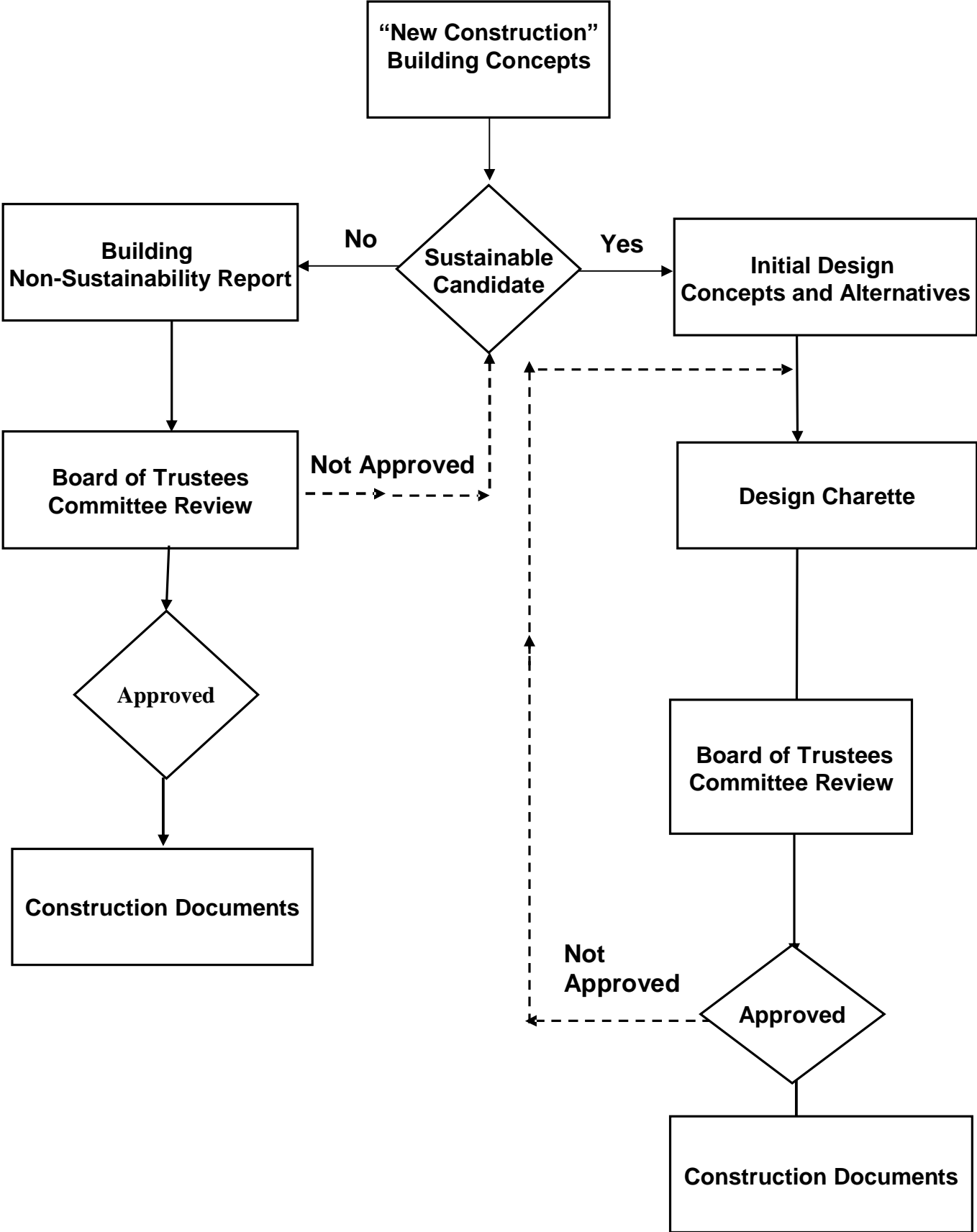
Sustainable Building Range

10 15 20 24 30 35 40 45 50



- Uniform Building Code 13 +/-
- California Title 24 15 +/-
- LEED™ Certified 26 – 32
- LEED™ Silver 33 – 38
- LEED™ Gold 39 – 51
- LEED™ Platinum 52+

C. Process/Procedures



C. Process/Procedures (continued)

1. *College Design Team* determines concepts and sustainable alternatives
2. *College Design Team* holds design charette workshop
3. Design concept review by *Board of Trustees Committee*
4. Submittal of plans and specifications to the *Division of the State Architect*
5. Submittal of DSA approved plans to the *Board of Trustees* for approval

A. Definition - Major Renovation Projects

There are two distinct types of Major Renovation projects. They are defined as either being *interior* or *exterior* related projects. Within those types, there are projects that are a combination of both interior and exterior.

Major Renovation – Criteria:

Building Size: 7,500 sq. ft - minimum

Major Renovation – 3 Types:

- **Interior “Major Renovation” projects**
 - typically a modernization of the interiors within a building
- **Exterior “Major Renovation” projects**
 - typically a scenario where major components of the exterior envelope have been changed or altered significantly.
“Envelope” is defined as exterior walls, windows, door systems or roof systems
- **Combination Interior and Exterior “Major Renovation” Projects**
 - a modernization project that involves both interiors and exterior components

B. Standards – Major Renovations **

Proposition A Bond Renovation Projects

- **Energy Standards**

Exterior Envelope (exterior wall, window, door systems, roof) Projects

-For projects where greater than 50% of the exterior envelope is renovated:

Target is to exceed Title 24 by 10%

Examples of methods of achieving this goal include:

- Insulating roofs with high thermal insulation values
- Providing high performance glazing (windows) systems
- Using high efficiency lighting systems
- Using energy efficient mechanical equipment
- Minimizing the use of skylights
- Insulating floors over outdoor air or unconditioned space; i.e., underground garages

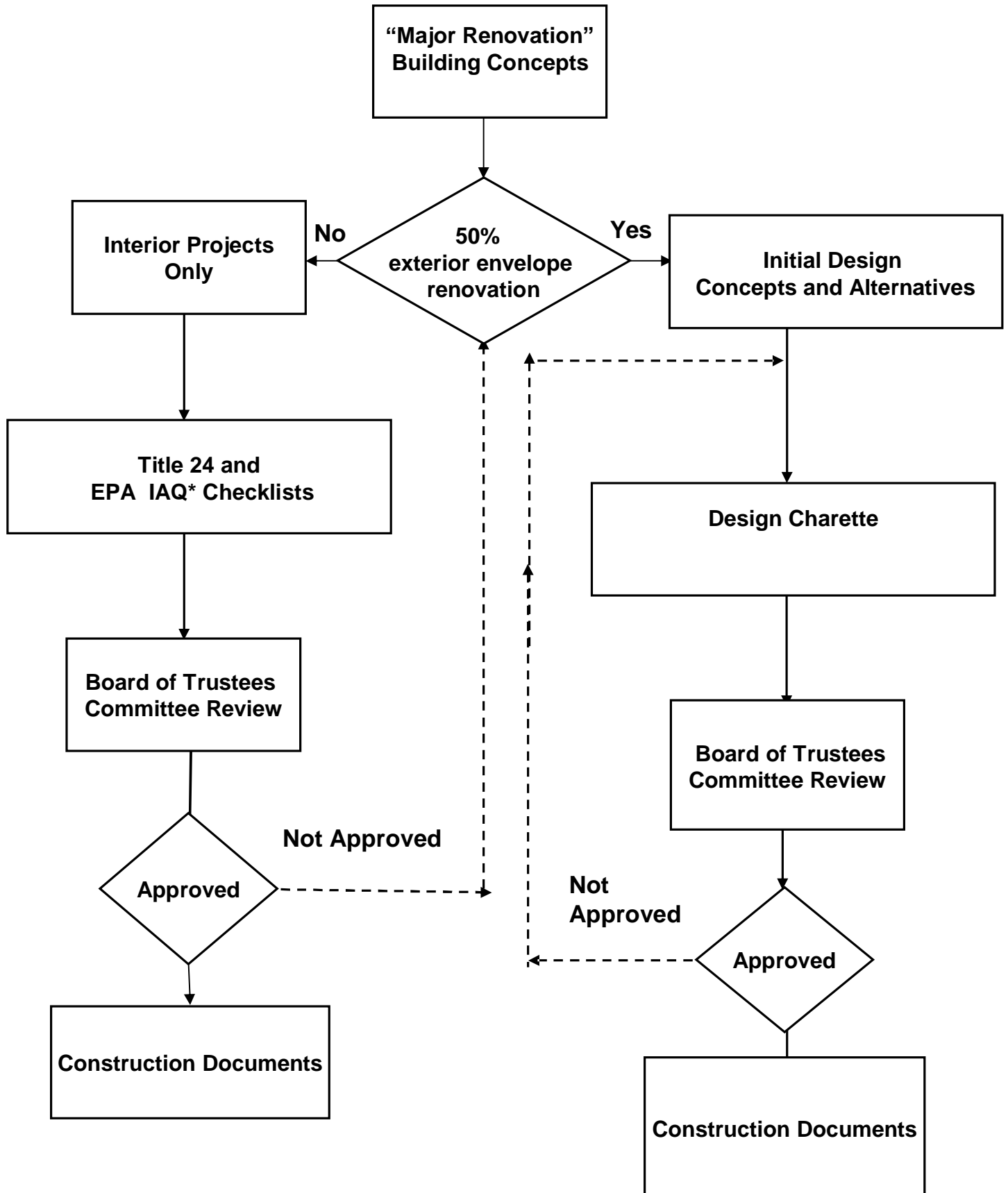
**** Application of Standard:** *Exterior Envelope projects that address more than 50% of exterior walls, windows, door systems, and roof systems to which this standard [Standard – Major Renovation] would be invoked is estimated to encompass no more than one (1) major renovation project per campus.*

B. Standards (continued)

NOTE:

Interior projects will comply with Title 24, Chapter 6, in use of high efficiency mechanical equipment, use of high efficiency lighting systems, and use of HVAC (heating, ventilating, and air conditioning) controls for operation of equipment. Indoor air quality standards will comply with the EPA (Environmental Protection Agency) Indoor Air Quality Checklist for renovation and repairs of buildings; for example, products with non-VOC (volatile organic compounds), testing and removing lead based paint and asbestos, changing air handling unit filters after renovation.

C. Process / Procedures



* EPA IAQ (Environmental Protection Agency Indoor Air Quality)

C. Process / Procedures (continued)

1. *College Design Team* determines if the project is an interior renovation project or a major renovation project
2. *College Design Team* holds design charette workshop
3. Design concept review by *Board of Trustees Committee*
4. Submittal of plans and specifications to the *Division of the State Architect*
5. Submittal of DSA approved plans to the *Board of Trustees* for approval